2D/3D Profile Sensor

MLSL101 LASER

Part Number

- ● **Compact, lightweight design – even suitable for robot applications**
- ● **Precise measuring range resolution X (> 1200 measuring points)**
- ● **Up to 3.6 million measuring points per second**

2D/3D Profile Sensors project a laser line onto the object to be detected and generate an accurate, linearized height profile with an internal camera which is set up at a triangulation angle. Thanks to its uniform, open interface, the weCat3D series can be incorporated by means of the DLL program library or the GigE Vision standard without an additional control unit. Alternatively, wenglor offers its own software packages for implementing your application.
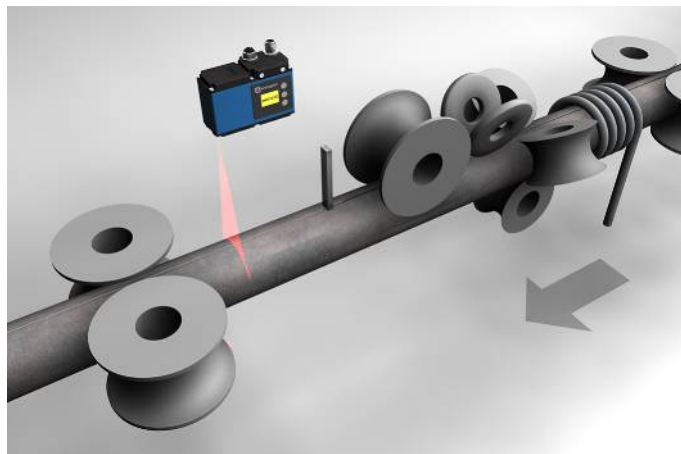
Technical Data

Optical Data	
Working range Z	72...108 mm
Measuring range Z	36 mm
Measuring range X	27...34 mm
Linearity Deviation	18 μm
Resolution Z	3,3...5,2 μm
Resolution X	22...28 μm
Light Source	Laser (red)
Wavelength	660 nm
Laser Class (EN 60825-1)	1M
Environmental conditions	
Ambient temperature	0...45 °C
Storage temperature	-20...70 °C
Max. Ambient Light	5000 Lux
EMC	DIN EN 61000-6-2; 61000-6-4
Shock resistance per DIN IEC 68-2-27	30 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	6 g (10...55 Hz)
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	300 mA
Measuring Rate	200...4000 /s
Subsampling	800...4000 /s
Inputs/Outputs	4
Switching Output Voltage Drop	< 1,5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	Ethernet TCP/IP
Baud Rate	100/1000 Mbit/s
Protection Class	III
FDA Accession Number	1610443-001
Mechanical Data	
Housing Material	Aluminium; Plastic
Degree of Protection	IP67
Connection	M12 × 1; 12-pin
Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.
Optic Cover	Plastic, PMMA
Weight	290 g
Web server	yes
Push-Pull	●

Connection Diagram No.	1022	1034
Control Panel No.	X2	A22
Suitable Connection Equipment No.	50	87
Suitable Mounting Technology No.		343

Complementary Products

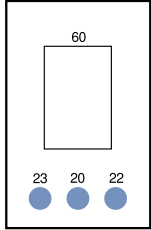| |
|---|
| Connection cables |
| Control Unit |
| Cooling Unit ZLSK001 |
| Protective Housing ZLSS003 |
| Protective Screen Retainer ZLSS001 |
| Software |
| Switch EHSS001 |
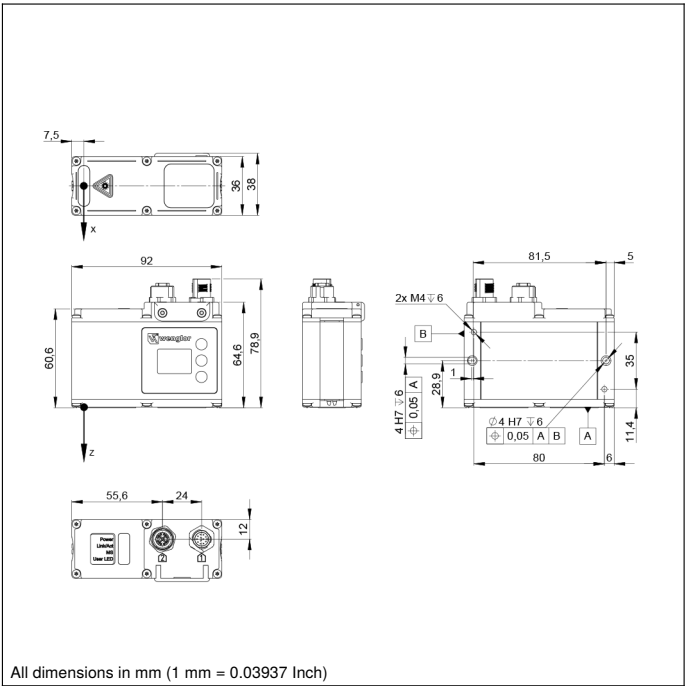
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

A22

- 68
- 85
- 78
- 4a

X2

60

23   20   22
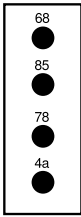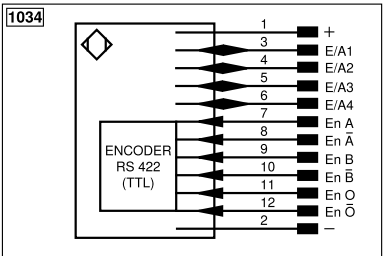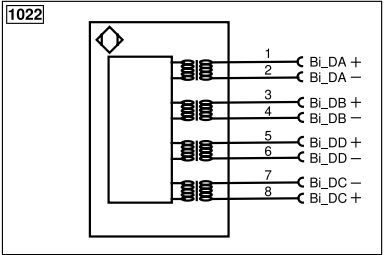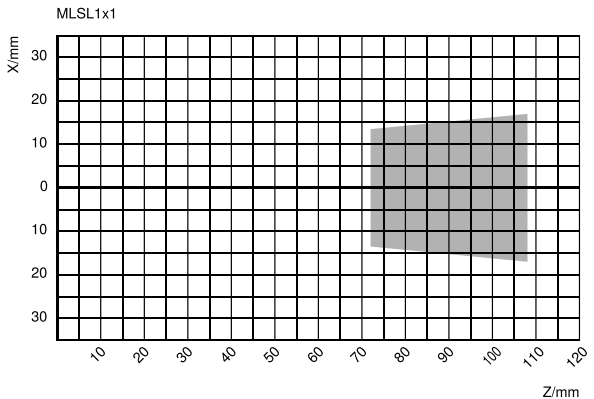
20 = Enter key
22 = Up key
23 = Down key
4a = User LED
60 = display
68 = supply voltage indicator
78 = Module status
85 = Link/Act LED

1022

Pin	Signal
1	Bi_DA +
2	Bi_DA −
3	Bi_DB +
4	Bi_DB −
5	Bi_DD +
6	Bi_DD −
7	Bi_DC −
8	Bi_DC +

1034

ENCODER RS 422 (TTL)

Pin	Signal
1	+
3	E/A1
4	E/A2
5	E/A3
6	E/A4
7	En A
8	En Ā
9	En B
10	En B̄
11	En O
12	En Ō
2	−

Legend						
+	Supply Voltage +	nc	Not connected	$EN_{B RS422}$	Encoder B/B̄ (TTL)
−	Supply Voltage 0 V	U	Test Input	EN_A	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	EN_B	Encoder B
A	Switching Output (NO)	W	Trigger Input	A_{MIN}	Digital output MIN
Ā	Switching Output (NC)	W−	Ground for the Trigger Input	A_{MAX}	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	A_{OK}	Digital output OK
V̄	Contamination/Error Output (NC)	O−	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	A_{MV}	Valve Output	O_{LT}	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY−	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
⊘	**IO**-Link	Rx+/−	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/−	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(−)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/−	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
$EN_{0 RS422}$	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	$EN_{A RS422}$	Encoder A/Ā (TTL)		

Measuring field X, Z

MLSL1x1

Z = Working distance

X = Measuring Range

LASER CLASS 1M
EN 60825-1

UKCA

CE

RoHS

IND. CONT. EQ
72HL / E189727
For use in class 2 circuits